

What is claimed is:

1. A wireless communication system, comprising:
a plurality of base station transceiver modules communicatively coupled to one
5 another via a high speed serial link (HSSL), each base station transceiver module
configurable to operate as a standalone single-sector base station transceiver; and
a backhaul interface module in communication with the base station transceiver
modules and configured to distribute received data to the plurality of base station
transceiver modules.
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2. The wireless communication system of claim 1, wherein the HSSL
comprises controlled impedance media.
3. The wireless communication system of claim 1, wherein the HSSL
15 comprises an optical interface.
4. The wireless communication system of claim 1, wherein the backhaul
interface module comprises a T1/E1 interface.
- 20 5. The wireless communication system of claim 1, wherein the backhaul
interface module comprises a 10/100BaseTX interface.
6. The wireless communication system of claim 1, wherein the backhaul
interface module is incorporated in the base station transceiver modules.
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7. The wireless communication system of claim 1, further comprising a
system interface unit (SIU) operatively coupled to at least one base station transceiver
module via the HSSL.
- 30 8. The wireless communication system of claim 1, wherein the base station
transceiver modules are arranged in a UMTS two-sector, one-carrier configuration.

9. The wireless communication system of claim 1, wherein the base station transceiver modules are arranged in a UMTS one-sector, two-carrier configuration.

5 10. The wireless communication system of claim 1, wherein the base station transceiver modules are arranged in a UMTS one-sector, two-carrier configuration without Tx diversity.

10 11. The wireless communication system of claim 1, wherein the base station transceiver modules are arranged in a CDMA two-sector, three-carrier configuration, and wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).

15 12. The wireless communication system of claim 1, wherein the base station transceiver modules are arranged in a CDMA three-sector, three-carrier configuration, and wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).

20 13. The wireless communication system of claim 1, wherein the base station transceiver modules are arranged in a CDMA one-sector, six-carrier configuration, and wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).

25 14. The wireless communication system of claim 1, wherein the base station transceiver modules are arranged in a CDMA one-sector, six-carrier configuration without Tx diversity, and wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).

30 15. The wireless communication system of claim 1, wherein the base station transceiver modules are arranged in a CDMA one-sector, nine-carrier configuration, and

wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).

16. The wireless communication system of claim 1, wherein the base station
5 transceiver modules are arranged in a CDMA one-sector, nine-carrier configuration without Tx diversity, and wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).

17. The wireless communication system of claim 1, wherein the base station
10 transceiver modules are arranged in a CDMA one-sector, twelve-carrier configuration, and wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).

18. The wireless communication system of claim 1, wherein the base station
15 transceiver modules are arranged in a CDMA one-sector, twelve-carrier configuration without Tx diversity, and wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).

19. The wireless communication system of claim 1, wherein the base station
20 transceiver modules are arranged in a CDMA three-sector, six-carrier configuration, and wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).

20. The wireless communication system of claim 1, wherein the base station
25 transceiver modules are arranged in a CDMA three-sector, six-carrier configuration without Tx diversity, and wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).

21. A base station transceiver module, comprising:
30 a digital module, configured to interface with a network;

an analog module, operatively coupled to the digital module and configured to perform RF signal processing;

a duplex arrangement;

a power amplifier arrangement; and

5 a power supply arrangement, operatively coupled to the power amplifier.

22. The base station transceiver module of claim 21, further comprising a GPS module configured to generate at least one reference signal.

10 23. The base station transceiver module of claim 21, wherein the digital module is compatible with the UMTS, 1xRTT, and 1xEV standards.

24. The base station transceiver module of claim 21, wherein the analog module is compatible with the UMTS, 1xRTT, and 1xEV standards.

15 25. The base station transceiver module of claim 21, wherein the digital and analog modules are integrated in a single module.

26. The base station transceiver module of claim 21, wherein the power
20 amplifier arrangement is configured to support a UMTS carrier.

27. The base station transceiver module of claim 21, wherein the power amplifier arrangement is configured to support a plurality of CDMA carriers.

25 28. The base station transceiver module of claim 21, wherein the power amplifier arrangement is configured to support an 1xRTT carrier.

29. The base station transceiver module of claim 21, wherein the power amplifier arrangement is configured to support a plurality of 1xEV carriers.

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30. The base station transceiver module of claim 21, wherein the duplex arrangement is configured to support at least one of the UMTS, CDMA, 1xRTT, and 1xEV air interface standards.
- 5 31. The base station transceiver module of claim 21, wherein the power supply arrangement is coupled to an AC power source.
32. The base station transceiver module of claim 21, wherein the power supply arrangement is coupled to an uninterruptible power supply (UPS).
- 10 33. The base station transceiver module of claim 21, wherein the power supply arrangement is coupled to a short-term battery backup arrangement.
34. The base station transceiver module of claim 21, further comprising a GPS antenna interface.
- 15 35. The base station transceiver module of claim 21, further comprising a Smart GPS antenna interface.
- 20 36. The base station transceiver module of claim 21, further comprising a high speed serial link (HSSL).
37. The base station transceiver module of claim 36, wherein the HSSL is operatively coupled to another base station transceiver module.
- 25 38. The base station transceiver module of claim 36, wherein the HSSL is operatively coupled to a system interface unit (SIU).
39. The base station transceiver module of claim 21, further comprising a backhaul interface module.
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40. The base station transceiver module of claim 39, wherein the backhaul interface module comprises a T1/E1 interface.

41. The base station transceiver module of claim 39, wherein the backhaul
5 interface module comprises a 10/100BaseTX interface.

42. The base station transceiver module of claim 21, further comprising a cross-polarized patch antenna.

10 43. The base station transceiver module of claim 21, further comprising a spatial diversity antenna.

44. The base station transceiver module of claim 21, wherein the digital module comprises:
15 a network processor module;
a control processor module; and
a physical channel processor module.

45. The base station transceiver module of claim 44, wherein the digital
20 module further comprises an MSM DSP-type call processing verification module.

46. The base station transceiver module of claim 21, wherein the analog module comprises a Tx application specific integrated circuit (ASIC) and an Rx ASIC.

25 47. The base station transceiver module of claim 21, wherein the analog module is configured to support adaptive pre-distortion.

48. The base station transceiver module of claim 21, wherein the analog module is configured to receive baseband data from the digital module.

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49. The base station transceiver module of claim 21, wherein the power supply arrangement incorporates a modular PUP design.

50. The base station transceiver module of claim 21, wherein the power supply arrangement incorporates a discrete design.

51. The base station transceiver module of claim 21, wherein the base station transceiver module is arranged in a UMTS one-sector, one-carrier configuration.

52. The base station transceiver module of claim 21, wherein the base station transceiver module is arranged in a CDMA one-sector, three-carrier configuration.

53. A method for conducting wireless communications, comprising:
communicatively coupling a plurality of base station transceiver modules to one another via a high speed serial link (HSSL), each base station transceiver module configurable to operate as a standalone single-sector base station transceiver;
coupling the base station transceiver modules to a backhaul interface module; and
distributing received data to the base station transceiver modules via the backhaul interface module.

54. The method of claim 53, wherein the HSSL comprises controlled impedance media.

55. The method of claim 53, wherein the HSSL comprises an optical interface.

56. The method of claim 53, wherein the backhaul interface module comprises a T1/E1 interface.

57. The method of claim 53, wherein the backhaul interface module comprises a 10/100BaseTX interface.

58. The method of claim 53, wherein the backhaul interface module is incorporated in the base station transceiver modules.

59. The method of claim 53, further comprising operatively coupling a system
5 interface unit (SIU) to at least one base station transceiver module via the HSSL.

60. The method of claim 53, wherein the base station transceiver modules are arranged in a UMTS two-sector, one-carrier configuration.

10 61. The method of claim 53, wherein the base station transceiver modules are arranged in a UMTS one-sector, two-carrier configuration.

62. The method of claim 53, wherein the base station transceiver modules are arranged in a UMTS one-sector, two-carrier configuration without Tx diversity.
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63. The method of claim 53, wherein the base station transceiver modules are arranged in a CDMA two-sector, three-carrier configuration, and wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).

20 64. The method of claim 53, wherein the base station transceiver modules are arranged in a CDMA three-sector, three-carrier configuration, and wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).

25 65. The method of claim 53, wherein the base station transceiver modules are arranged in a CDMA one-sector, six-carrier configuration, and wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).

66. The method of claim 53, wherein the base station transceiver modules are arranged in a CDMA one-sector, six-carrier configuration without Tx diversity, and
30 wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).

67. The method of claim 53, wherein the base station transceiver modules are arranged in a CDMA one-sector, nine-carrier configuration, and wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).

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68. The method of claim 53, wherein the base station transceiver modules are arranged in a CDMA one-sector, nine-carrier configuration without Tx diversity, and wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).

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69. The method of claim 53, wherein the base station transceiver modules are arranged in a CDMA one-sector, twelve-carrier configuration, and wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).

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70. The method of claim 53, wherein the base station transceiver modules are arranged in a CDMA one-sector, twelve-carrier configuration without Tx diversity, and wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).

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71. The method of claim 53, wherein the base station transceiver modules are arranged in a CDMA three-sector, six-carrier configuration, and wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).

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72. The method of claim 53, wherein the base station transceiver modules are arranged in a CDMA three-sector, six-carrier configuration without Tx diversity, and wherein the base station transceiver modules are operatively coupled to a system interface unit (SIU).